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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/603,204	06/26/2000	Kyung-geun Lee	1293.1126/MDS/JGM	2962
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EXAMINER

PATEL, GAUTAM

ART UNIT

PAPER NUMBER

2653

DATE MAILED: 06/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/603,204

Applicant(s)  
Lee et al.

Examiner  
Gautam R. Patel

Art Unit  
2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on May 3, 2002

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) 1-57 is/are pending in the application

4a) Of the above, claim(s) 1-8, 18-28, and 41-48 is/are withdrawn from consideration

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 9-17, 29-40, and 49-57 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirements.

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some\* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_

6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

1. Claims 1-57 are pending for the examination. Claims 1-8, 18-28 and 41-48 are withdrawn from the consideration. Examination of claims 9-17, 29-40 and 49-57 follows.

### *Priority*

2. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

3. The disclosure is objected for following reasons.  
The title of the invention is neither precise nor descriptive. A new title is required which should include, using twenty words or fewer, claimed features that differentiate the invention from the Prior Art. The title should reflect the gist of or the improvement of the present invention.

Correction is required.

### *Election/Restriction*

4. Claims 1-8, 18-28 and 41-48 are withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to figs. 28 and 30; for detecting tilt and compensating length and width of the recording mark. Election was made with traverse of claims 9-17, 29-40 and 49-57.  
figs. 29 & 31  
^

Applicant's election with traverse of group b in Paper No. 7 is acknowledged. The traversal is on the ground(s) that "the Examiner shows by appropriate explanation either separate classification, separate status in the art, or a different field of search as defined ... . The Examiner has not set forth any of these criteria or any other criteria for establishing the there would be serious burden if restriction is required." ... "Significantly, it is noted that the Examiner has not identified different classifications for the claims in groups I and II ...".

This is not found persuasive because, the Examiner does not need to show separate classification or field of search for election of the species requirement. See 803.00 and 808.00(a); M.P.E.P.

As to the argument regarding all claims are generic. It should be pointed out that fig. 28 does not disclose defocus at all. Therefore claims 11 and 17 are NOT generic.

The requirement is still deemed proper and is therefore made **FINAL**.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

#### ***Claim Rejections - 35 U.S.C. § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 9-10, 29-31, 49-50 are rejected under 35 U.S.C. § 102(b) as being anticipated by Eastman et al., US. patent 5,446,716 (hereafter Eastman).

As to claim 9, Eastman discloses the invention as claimed [see Figs. 1-6] including detecting defocus and compensating a recording signal, comprising the steps of:

detecting the defocus of the optical recording medium [col. 2, line 49 to col. 3, line 33 and col. 8, line 49-66]; and

compensating a recording signal with respect to the detected defocus using a predetermined scheme [col. 2, line 49 to col. 3, line 33 and col. 8, line 49-66].

8. As to claim 10, Eastman discloses:

the predetermined scheme comprises adjusting a power level required for recording the recording signal [col. 2, line 49 to col. 3, line 33 and col. 8, line 49-66].

9. As to claim 29, Eastman discloses:

a tilt and/or defocus detector which detects the tilt and/or the defocus of the optical recording medium; and

a recording compensator which compensates a recording pulse with respect to the detected tilt and/or defocus using a predetermined scheme;

wherein the recording pulse comprises a predetermined recording pattern [col. 2, line 49 to col. 3, line 33 and col. 8, line 49-66].

NOTE: Eastman discloses defocus.

10. As to claim 30, Eastman discloses:

according to the predetermined scheme, said recording compensator adjusts a power level required for recording the recording pulse with respect to the detected defocus [col. 2, line 49 to col. 3, line 33 and col. 8, line 49-66].

11. As to claim 31, Eastman discloses:  
according to the predetermined scheme, said recording compensator adjusts a power and/or a time required for recording the recording pulse with respect to the detected tilt [col. 2, line 49 to col. 3, line 33 and col. 8, line 49-66].
12. As to claims 49-50 they are claims corresponding to claims 9-10 respectively and they are therefore rejected for the same reasons set forth in the rejection of claims 9-10 respectively, supra.

***Claim Rejections - 35 U.S.C. § 103***

13. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

14. Claims 11-13, 17, 32 and 39-40, 51-53 and 57 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Eastman as applied to claim 9-10, 29-31, 49-50 above in view of Itakura et al., US. patent 5,978,332 (hereafter Itakura).  
As to claim 11, Eastman discloses:  
detecting the defocus of the optical recording medium;

compensating a write pulse with respect to the detected defocus using a predetermined scheme, wherein the write pulse comprises a predetermined recording pattern;

detecting the tilt of the recording medium [col. 3, lines 8-21] of the optical recording medium [col. 2, line 49 to col. 3, line 33 and col. 8, line 49-66];

Eastman does not specifically disclose well known details of tilt compensation apparatus and method associated with tilt compensation such as compensating the write pulse with respect to the detected tilt. However Itakura clearly discloses:

compensating the write pulse with respect to the detected tilt [col. 5, lines 16-50 and fig. 19; Itakura]. It would have been obvious to a person of ordinary skill in the art at the time invention was made to have provided the data processing system of Eastman's with details of tilt detection and compensation scheme as taught by Itakura, because doing so would have provided mechanism for tilt correction which is vital and necessary part of video recording and controlling the laser power in presence of system degradation such as defocus and tilt [see col. 3, lines 11-20-1; Eastman].

15. As to claim 12, Eastman discloses:

the predetermined scheme comprises adjusting a power level with respect to the detected defocus [col. 2, line 49 to col. 3, line 33 and col. 8, line 49-66].

16. As to claim 13, Itakura discloses:

compensating the write pulse with respect to the detected tilt further comprises:  
shifting the recording pattern with respect to the detected tilt by both an amount that the recording pattern was shifted due to the detected tilt, and in a direction opposite to the direction that the recording pattern was shifted due to the detected tilt [col. 5, lines 16-50]; and

adjusting a power and/or a time required for recording with respect to the detected tilt in order to compensate for a size of a recording mark corresponding to the recording signal [col. 6, lines 18-32].

17. As to claim 17, Itakura discloses:

detecting the tilt and/or the defocus of the optical recording medium; and  
adaptively compensating the recording pattern with respect to the detected tilt  
and/or defocus using a memory [inherently present], wherein the memory storing data  
comprising

a write power to compensate with respect to the detected defocus [col. 2, line 49  
to col. 3, line 33 and col. 8, line 49-66];

a power and/or a time required for recording to compensate for an amount of  
shift of the recording pattern [col. 5, lines 16-50 and col. 6, lines 18-32]; and

a power and/or a time required for recording to compensate for a length and a  
width of recording mark with respect to a detected tilt and/or a length of a recording  
mark [col. 5, lines 16-50 and col. 6, lines 18-32].

18. As to claim 32, Itakura discloses:

said recording compensator adjusts a write power with respect to the detected  
defocus, and generates the recording pulse earlier to compensate for an amount of  
shift with respect to the detected tilt, and adjusts a power and/or a time of the shifted  
recording pulse to compensate a length and a width of a recording mark [col. 5, lines  
16-50 and [col. 6, lines 18-32].

19. As to claim 39, it is rejected for the same reasons set forth in the rejection of  
claim 17, supra.

20. As to claim 40, it is rejected for the same reasons set forth in the rejection of  
claim 13, supra.



21. As to claims 51-53 they are claims corresponding to claims 11-13 respectively and they are therefore rejected for the same reasons set forth in the rejection of claims 11-13 respectively, supra.
22. As to claim 57, it is rejected for the same reasons set forth in the rejection of claim 11, supra.
23. Claims 14-16, 33-38, and 54-56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Eastman and Itakura as applied to claims 9-13, 17, 29-32, 39040, 49-53 and 57 above, and further in view of Shoji et al. (US. patent 6,175,541) (hereafter Shoji).

As to claim 14, combination of Eastman and Itakura discloses all of the above steps. Combination of Eastman and Itakura does not specifically disclose details of adjusting the write time to compensate the width of the mark and adjusting the end of first pulse or start of last pulse as claimed. However Shoji clearly discloses this.

One skilled in the art would have clearly recognized that the device of Eastman and Itakura would have been sensitive to degradation such as tilt and defocus [as disclosed by Eastman, see col. 3, lines 8-21] and that any tilt and defocus not compensated would have compromised the quality of the electrical signal. Combination of Eastman and Itakura does not teach details of the pulse train that are necessary for compensating these defocus and tilt errors as claimed. Shoji teaches that adjustment of pulses is well known to improve quality of the signal by adjusting the power, which comprises adjusting a write power to compensate a length of the recording mark, and the adjusting the time comprises adjusting a write time to compensate a width of the recording mark [col. 2, line 66 to col. 3, line 67 and col. 4, lines 3-20].

Therefore, it would have been obvious to have used a pulse train compensation method in system of Combination of Eastman and Itakura as taught by Shoji in order to control the tilt and defocus in optimum fashion by controlling the start and end edge of the pulses for high density recording [col. 2, lines 50-64; Shoji].

24. As to claim 15, Shoji discloses:

adjusting the recording mark width comprises adjusting an ending time of a first pulse and/or a starting time of a last pulse of the recording pattern [col. 28, lines 29-46].

25. As to claim 16, Shoji discloses:

the adjusting the power comprises adjusting a write power to compensate a length of the recording mark, and

adjusting a write power of a multi-pulse chain of the recording pattern to adjust a width of the recording mark [col. 2, line 66 to col. 3, line 67 and col. 4, line 3-20].

26. As to claim 33, Shoji discloses:

said recording compensator adjusts the power required for recording to compensate the length of the recording mark, and adjusts the time required for recording in order to compensate the width of the recording mark [col. 2, line 66 to col. 3, line 67 and col. 4, lines 3-20].

27. As to claim 34, Shoji discloses:

said recording compensator adjusts the power by adjusting a write power to compensate the length of the recording mark, and adjusts the time by adjusting an ending time of a first pulse and/or a starting time of a last pulse to compensate the width of the recording mark [col. 28, lines 29-46].

28. As to claim 35, Shoji discloses:

said recording compensator both adjusts the power by adjusting a write power to compensate the length of the recording mark, and adjusts a power of a multi-pulse chain of recording pattern to compensate the width of the recording mark [col. 2, line 66 to col. 3, line 67 and col. 4, line 3-20].

29. As to claims 36-38:

Regarding claims 36-38, although combination of Eastman, Itakura and Shoji does not specifically disclose that the wavelength of the source is 430 nm and numerical aperture is greater than or equal to .6 when substrate thickness is .3 mm or higher and numerical aperture is greater than or equal to .7 when substrate thickness is .3 mm or lower. Combination of Eastman, Itakura and Shoji teaches that different wavelength would require different aperture of the lens and hence substrate thickness would also vary accordingly. The limitations in claims 36-38 do not define a patentable distinct invention over that in combination of Eastman, Itakura and Shoji since both the invention as a whole and combination of Eastman, 2 and Shoji are directed to processing the defocus and tilt and adjusting the power accordingly. The degree in which the aperture is adjusted or substrate thickness is selected presents no new or unexpected results, so long as the compensation of the defocus and tilt in a successful way. Therefore, to have different thickness of the substrate which corresponds to different numerical aperture would have been routine experimentation and optimization in the absence of criticality.

30. As to claims 54-56 they are claims corresponding to claims 14-15 respectively and they are therefore rejected for the same reasons set forth in the rejection of claims 14-16 respectively, supra.

***Other prior art cited***

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Hajjar et al. (US. patent 5,675,568) "**Laser power control in an optical recording system to compensate for variations in mark length resulting from a wobbled groove**".

- b. Gage et al. (US. patent 5,903,537) "Direct read during mark formation for laser power correction".
- c. Yanagawa (US. patent 5,483,512) "Optical information recording/reproducing device".
- d. Call et al. (US. patent 5,450,383) "Monitoring and adjusting laser write power ..".
- e. Iwane et al. (US. patent 5,614,983) "Automatic focus device and method".
- f. Kirino et al. (US. patent 5,848,045) "Method for recording and reading an optical disk".
- g. Iwasa et al. (US. patent 5,327,411) "Write control method and apparatus for writing optical disk data".

**Contact information**

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. William Korzuch, can be reached on (703) 305-6137.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.



Gautam R. Patel  
Patent Examiner  
Group Art Unit 2653

June 22, 2002



W. B. YOUNG  
PRIMARY EXAMINER